

Amendment
SN 09/359,561
Page 5 of 17

11. (amended) The method of claim 2 wherein the video frame sequence is encoded using slice based encoding.

REMARKS

This amendment is intended as a full and complete response to the non-final Office Action mailed July 17, 2002. In the Office Action, the Examiner notes that claims 1-29 are pending of which claims 27-29 are withdrawn from consideration and claims 1-26 are rejected. By this amendment, the applicants have canceled claims 1 and 22-29 (claims 27-29 are canceled as being drawn to non-elected subject matter) and amended claims 2, 9, 10 and 11. Claims 3-8 and 12-21 remain unamended.

In view of the following discussion, the applicants submit that none of the claims now pending in the application are anticipated or obvious under the respective provisions of 35 U.S.C. §§102 and 103. Thus, the applicants believe that all of these claims are now in allowable form.

It is to be understood that the applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to applicants' subject matter recited in the pending claims. Further, applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendments.

THE REJECTIONS

a. 35 U.S.C. §101

The Examiner has rejected claims 22-26 as being directed to non-statutory subject matter under 35 U.S.C. §101. The applicants have canceled claims 22-26. Therefore, the rejection under 35 U.S.C. §101 is now considered moot.

Amendment
SN 09/359,561
Page 6 of 17

b. 35 U.S.C. §102

1. Claims 1-6, 8-10, and 14-25

The Examiner has rejected claims 1-6, 8-10 and 14-25 as being anticipated under 35 U.S.C. §102 by Terasawa et al. (U.S. Patent No. 6,147,714, issued November 14, 2000), hereinafter "Terasawa"). The applicants respectfully traverse the rejection.

The applicants have amended claim 2 to rewrite it in independent form and have canceled claim 1. In particular, claim 2, as amended, recites:

"A method of producing an encoded user interface comprising:

producing a video frame sequence representing an interactive program guide by combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence;

encoding said video frame sequence within a head end of an information distribution system." (emphasis added)

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The Terasawa reference fails to disclose each and every element of the claimed invention, as arranged in the claim. That is, the Terasawa reference fails to disclose "combining, in a frame synchronized manner, background imaging with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence."

The Terasawa patent discloses an interactive program guide that contains text and reduced size still images for each channel

Amendment
SN 09/359,561
Page 7 of 17

being broadcast for a specific time period. Terasawa teaches three types of EPG information or signals. EPG 1 represents still picture data forming the program window shown in FIG. 6, while EPG 2 and EPG 3 indicate data concerning the title, broadcast date and time, cast and the synopsis of the program. EPG 2 is concerned with programs to be broadcast in the near future, while EPG 3 relates to programs to be broadcast in the distant future (see Terasawa, column 6, lines 35-42). None of these EPG signals, either singly or in combination, teach or suggest combining in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence.

Rather, the Terasawa reference discloses that a program window is formed of still pictures obtained by reducing the size of the typical frames of the broadcast channels. For example, referring to FIG. 8 of Terasawa, an electronic program guide for all the channels (entire program table) is shown in which the names of broadcast stations are shown in columns and times are indicated in rows. The background of the EPG is a single frame which was targeted for presenting as part of a predetermined program for promotion. That is, the JPEG video encoder block built into the EPG data generating device selects predetermined typical frames from video signals input from the switcher under the instruction of a program controller device (see Terasawa, FIG. 8, column 5, lines 6-16 and column 4, lines 7-11).

By contrast, the applicants' invention provides at least one video sequence, as opposed to still pictures. That is, the Terasawa reference fails to provide an interactive program guide having a video region for playing at least one video sequence. As such, the Terasawa reference fails to disclose each and every element of the claimed invention as arranged in the claims.

Amendment
SN 09/359,561
Page 8 of 17

Therefore, the applicants submit that claim 2, as amended, is not anticipated and fully satisfies the requirements of 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 3-6, 8-10, 13 and 14 depend either directly or indirectly from independent claim 2 and recite additional limitations thereof. As such and for at least the same reasons discussed above, applicants submit that these dependent claims are also not anticipated and fully satisfy the requirements under 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

2. Claims 15-25

Independent claim 15 recites:

"Apparatus for producing an encoded user interface comprising:
 a compositor for producing a frame sequence representing an interactive program guide;
 an encoder, coupled to said compositor and located within a head end of an information distribution system, for encoding said frame sequences to form a bitstream." (emphasis added)

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The Terasawa reference fails to disclose each and every element of the claimed invention, as arranged in the claim. That is, the Terasawa reference fails to disclose "an encoder coupled to said compositor."

The Examiner has indicated that FIG. 1 discloses a compositor that is coupled to an encoder. Review of the Terasawa reference shows that a switcher is coupled to the encoder where

Amendment
SN 09/359,561
Page 9 of 17

the switcher is controlled by a program transmitting control device that selects a plurality of predetermined broadcast channels (a video signal, an audio signal and a confidential broadcast program) from the input video signals and audio signals and outputs them to a promotional channel generating device 302. The switcher also selects five predetermined channels from the input signals and outputs them to a plurality of MPEG encoders. The predetermined video signals output from the switcher are also supplied to a JPEG encoder built in an electronic program guide data generating device (see Terasawa column 3, lines 35-49). The switcher of Terasawa is completely different from the compositor of the applicants' invention. In particular, the compositor combines a background imaging vs1 in the first informational video vs2. That is, the compositor "synchronizes the frames, resizes the informational video to fit into a predefined rectangular region, positions the rectangular region on the background and merges the two video frame sequences" (see specification page 16, lines 31-37). In contrast, a switcher of the Terasawa reference simply allocates video signals to various output devices such as the MPEG encoders without combining the input signals together to form a single composite signal.

Further, the JPEG video encoder that is built into the EPG data gathering device selects predetermined typical frames for a video signal input from the switcher. The encoder then reduces each frame into smaller size and further compresses the frame data into first EPG data which is then output to each of the multiplexers. Also fed to the multiplexers is other EPG data generated by the EPG data generating device (see Terasawa, column 4, lines 7-21). Therefore, Terasawa fails to teach each and every element as arranged in the claim, since it fails to teach an encoder coupled to the compositor. As such, the applicants submit that claim 15 is not anticipated and fully satisfies the

Amendment
SN 09/359,561
Page 10 of 17

requirements of 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 16-21 depend, either directly or indirectly, from independent claim 15 and recite additional features thereof.

As such, and for at least the same reasons discussed above, the applicants submit that these dependent claims also fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.

b. 35 U.S.C. §103

1. Claim 7

The Examiner has rejected claim 7 as being obvious under 35 U.S.C. §103 over Terasawa. The applicants respectfully traverse the rejection.

Claim 7 depends indirectly from independent claim 2, as amended, and recites additional features thereof. In particular, claim 7 recites in part:

"A method of producing an encoded user interface comprising:
producing a video frame sequence representing an interactive program guide by combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence;
encoding said video frame sequence within a head end of an information distribution system." (emphasis added)

The Terasawa reference fails to teach or suggest the applicants' invention as a whole. As discussed above, the Terasawa reference fails to teach or suggest "combining, in a frame synchronized manner, background imaging with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence." Rather, the

Amendment
SN 09/359,561
Page 11 of 17

Terasawa reference is limited to disclosing an interactive program guide that contains text and reduced size still images for each channel being broadcast for a specific time period. Therefore, the Terasawa reference fails to teach or suggest the applicants' invention as a whole, since it fails to teach or suggest combining in a frame synchronized manner background imaging with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence. As such, the applicants submit that claim 7 is not obvious and fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.

2. Claims 11-13

The Examiner has rejected claims 11-13 as being obvious under 35 U.S.C. §103 over Terasawa. The applicants respectfully traverse the rejection.

Claims 11-13 depend indirectly from independent claim 2, as amended, and recite additional features thereof. In particular, claims 11-13 recites in part:

"A method of producing an encoded user interface comprising:
producing a video frame sequence representing an interactive program guide by combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence;
encoding said video frame sequence within a head end of an information distribution system." (emphasis added)

The Terasawa reference fails to teach or suggest the applicants' invention as a whole. As discussed above, the Terasawa reference fails to teach or suggest "combining, in a

Amendment
SN 09/359,561
Page 12 of 17

frame synchronized manner, background imaging with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence." Rather, the Terasawa reference is limited to disclosing an interactive program guide that contains text and reduced size still images for each channel being broadcast for a specific time period. Therefore, the Terasawa reference fails to teach or suggest the applicants' invention as a whole, since it fails to teach or suggest combining in a frame synchronized manner background imaging with at least one video sequence and at least one graphic containing program guide information to form the video frame sequence. As such, the applicants submit that claims 11-13 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and is patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.

CONCLUSION

The applicants believe all the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of an adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

9/12/02

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Amendment
SN 09/359,561
Page 13 of 17

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Amendment
SN 09/359,561
Page 14 of 17

Appendix I
MARKED-UP VERSION OF THE SPECIFICATION

Paragraph beginning on page 6, line 18 and ending on page 6,
line 28:

FIG. 1 depicts a high-level block diagram of an information distribution system 100, e.g., a video-on-demand system or digital cable system, that incorporates the present invention. The system 100 contains service provider equipment (SPE) 102 (e.g., a head end), a distribution network 104 (e.g., hybrid fiber-coax network) and subscriber equipment (SE) 106. This form of information distribution system is disclosed in commonly assigned U.S. patent [application serial number 08/984,710 filed December 3, 1997] No. 6,253,375, issued June 26, 2001. The system is known as the OnSet™ system provided by DIVA Systems Corporation of Menlo Park, California.

Paragraph beginning on page 7, line 4 and ending on page 7,
line 12:

In an interactive information distribution system such as the one described in commonly assigned U.S. patent [application 08/984,710, filed December 3, 1997] No. 6,253,375, issued June 26, 2001, the program bitstreams are addressed to particular subscriber equipment locations that requested the information through an interactive menu. An appropriate interactive menu structure for requesting video on demand is disclosed in commonly assigned U.S. patent [application serial number 08/984,427, filed December 3, 1997] No. 6,208,335, issued March 27, 2001.

Paragraph beginning on page 14, line 16 and ending on page
14, line 18:

Using the same profile and constant bit rate coding for each encoding unit, the generated streams for different IPG pages are

Amendment
SN 09/359,561
Page 15 of 17

formed in a similar length compared to each other. This is due to the fact that the source material is almost identical differing only in the characters in the guide from one page to another. In this way, while streams are generated in close lengths, they are not exactly the same lengths. For example, for any given sequence of 15 video frames, the number of transport packets in the sequence varies from one guide page to another. Thus a finer adjustment is required to synchronize the beginnings and ends of each sequence across all guide pages in order for the countdown switching to work.

For the paragraph beginning on page 18, line 13 and ending on page 18, line 37:

FIG. 5A depicts a first illustrative IPG page layout 500₁ as decoded by the decoder of the subscriber equipment. The page 500₁ is one of the fifteen available screens (collectively referred to as IPG pages 500) that can be decoded by appropriate selection of a screen PID within a transport stream. Similar IPG screens can be also decoded from other transport streams that are broadcast to the subscriber equipment from the head end equipment. As decoded, the informational video in regions 504, 506 and 508 plays as any decoded video streams. The audio signal associated with one of the informational video sequences also is decoded and plays in conjunction with the video (i.e., audio follows video). The first IPG graphic 510 contains, for example, program information concerning channels 1 through 10. The subscriber, by manipulating an input device, can scroll through the program selections. As the scrolling function transitions from one cell to another, the cell is highlighted by a change in the on-screen display graphics. These graphics are sent to the subscriber equipment as "user data" and/or "private data" within the transport stream. A detailed description of the operation of

Amendment
SN 09/359,561
Page 16 of 17

the IPG 500 is presented in commonly assigned US patent application [_____, filed simultaneously herewith] Serial No. 09/359,560, filed on July 22, 1999 (Attorney docket number 070 CIP2) and herein incorporated by reference.

For the paragraph beginning on page 19, line 22 and ending on page 19, line 35:

A second illustrative IPG page layout 600 is shown in FIG. 6. This IPG page layout is encoded in the exact same manner as the layout 500 of FIGS. 5A-5C. The IPG of FIG. 6 operates in a similar manner to that of IPG layout 500. The layout 600 is divided vertically such that the informational video, e.g., a video barker, appears on the right half of the layout and the guide region appears on the left. The guide graphics, graphical icons, background imagery, and informational video are combined and then encoded in the same manner as discussed above. A detailed description of the IPG 600 is presented in commonly assigned US patent application [_____, filed simultaneously herewith] Serial No. 09/359,560, filed on July 22, 1999 (Attorney docket number 070 CIP2) and herein incorporated by reference.

Amendment
SN 09/359,561
Page 17 of 17

Appendix II

MARKED-UP VERSION OF THE CLAIMS

2. (amended) . [The method of claim 1 wherein said producing step comprises as step of:] A method of producing an encoded user interface comprising:

producing a video frame sequence representing an interactive program guide by combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence;

encoding said video frame sequence within a head end of an information distribution system.

9. (amended) The method of claim [1] 2 wherein the video frame sequence is a television program.

10. (amended) The method of claim [1] 2 wherein the video frame sequence is an advertising program.

11. (amended) The method of claim [1] 2 wherein the video frame sequence is encoded using slice based encoding.